

Fungi from Raroia in the Tuamotu Archipelago

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BETWEEN July 21 and September 6, 1952, M. S. Doty collected a number of specimens of fungi on Raroia (ca. 16°05' S., 142°25' W.) in the Tuamotu Archipelago. These were sent to the writer for identification. In turn, certain specimens were forwarded to specialists for more accurate identification than the writer could furnish.

The geographic distribution of the fungi of the islands in the Pacific Ocean is poorly known, largely because usually only the more obvious things, such as *Pycnoporus sanguineus*, are collected. It is probable that the fungi of the Tuamotus have never before been collected as thoroughly as they were on Dr. Doty's visit.

There are few habitats on an atoll for fungi. These are largely the dead wood of native or introduced trees, and driftwood.

In addition to the seven species reported below, based on material in 19 collections, other species were found. However, some specimens were unidentified because they were immature at the time of collection, had passed maturity and were no longer producing spores, or were poorly dried because of inadequate drying facilities.

The writer wishes to acknowledge the help of B. Lowy, J. H. Miller, L. E. Wehmeyer, John Eriksson, S. J. Hughes, J. A. Stevenson, and J. L. Lowe, in identifying this material. Duplicate specimens of all species listed have been forwarded to the Bishop Museum, Honolulu; and the National Fungus Collections, Beltsville, Maryland. Duplicates of several species were sent to the New York Botanical Gardens.

ASCOMYCETES

Anthostomella sp.

On fallen rachis of leaf of *Cocos nucifera*. 11274, 11277. July 21, 1952. 11277 is older than

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11274 and has more crowded perithecia. Dr. L. E. Wehmeyer stated that these specimens have the spores of *A. melanosticta* but that this species shows no surface blackening. Additional species which are similar include *A. contaminans* (Dur. & Mont.) Sacc., and *A. lugubris* (Rob. & Desm.) Sacc. The description of *A. cocoes-capitatae* Cab. was not available at the time of examination.

Hypoxylon chrysoconium Berk. & Br.

Six collections were made from decaying wood of *Guettarda speciosa* or *Messerschmidia argentea*. 11279, 11280, 11374, 11389, 11390, 11393. July 21, 28, 29. Dr. J. H. Miller stated that "this is intermediate with *Rosellinia* but the perithecia are often united into an effused stroma. It occurs from India through the Hawaiian Islands." The mycelium on the surface of the wood is golden in color, making the species readily identifiable in the field. Two specimens were without perithecia and so were identified by analogy.

Hypoxylon investiens (Schw.) Berk.

Three specimens were obtained from decaying wood of *Guettarda speciosa* or *Messerschmidia argentea*. 11267, 11273, 11606. July 21, August 7. Dr. Miller indicated that the specimens were rather old, showed few perithecia, and that blackening of the wood was characteristic of the species. This species forms thin, brown, effused patches on decaying twigs, branches, and wood.

Phaeopeltosphaeria irregularis Wehmeyer

Two specimens of this species were found on old wood, probably drift wood. 11164, 11394. July 9, 28. Dr. Wehmeyer indicated that this species has now been found on three atolls of the Marshall Islands and on the Galapagos Islands. He said that "it is apparently common in the South Pacific on driftwood."

BASIDIOMYCETES

Auricularia mesenterica Pers.

Three collections of this widely distributed tropical species were taken from wood of *Messerschmidia argentea*. 11262, 11386, 11661. July 21, 28, August 8.

Schizophyllum commune Fr.

Although the shape of the specimens obtained by Doty is typical of more northern material usually assigned to this species, this specimen could as easily have been placed in *S. radiatum* (Swartz) Fries² because of its tropical distribution. Throughout the Pacific Basin only one species is recognized in this genus at present. 11425. July 26.

Thirteen collections of thelephoraceous fungi were sent to John Eriksson for identification. Unfortunately, Dr. Eriksson was unfamiliar with the species these collections represent. In addition, the methods of preservation of these specimens make their identification quite difficult. Representatives of *Peniophora* sect. *Coloratae*, and sect. *Hypphales* were present. No spores and no fertile fruiting structures were present in the collections, although in some cases holobasidia were observable. It was suggested that through habitat, knowledge of sterile hymenial structures, and other features of a collection, a person familiar with tropical species in this group could make tentative identifications.

The same difficulties were found in the several collections of pore fungi which were made. A large trametoid specimen, a medium-size black *Pbellinus*-like species represented by two normal specimens and two overgrown with a *Peniophora*-like species, and nine specimens of resupinate polypores were among the materials obtained. Because of his wide familiarity with tropical polypores these specimens were submitted to John A. Stevenson, National Fungus Collections, for study. The writer had found no satisfactory basidial or spore characters and hoped that sight identification might be possible. Neither Mr. Stevenson, nor Josiah L. Lowe who

also examined them, could come to any conclusion concerning species names for these specimens.

The collection and adequate preparation of specimens of this type in tropical regions is difficult. It has been suggested that if quick drying equipment is not readily available, the hymenia should be inverted to prevent loss of spores during drying. Care should also be taken to prevent the specimens from getting too wet during periods of prolonged rain or high humidity. This condition tends to reactivate the hymenial tissues and exhaust the spore-producing capacity of the basidia, which then become unrecognizable structures.

FUNGI IMPERFECTI

Helicomycetes roseus Link

Two specimens composed of pieces of wood partially covered with a white effused growth were assigned to this species. Spores from this white growth were very similar to those described by Linder (Ann. Mo. Bot. Gard. 16: 271, 1929) for this species. The material was assigned to this species on that basis as well as on the fact that it resembles closely material described under this name by Rogers (Pacif. Sci. 1: 106, 1947), from the Marshall Islands. Dr. S. J. Hughes did not agree with this identification but offered no substitute. 11283, 11602. July 21, September 6.

Helicosporium lumbricoides Sacc. em. Matr.

Two collections were made from material on old spathes of *Cocos nucifera*. 11269, 11270. July 21. Identification by S. J. Hughes.

Oidium curtisii (Berk.) Linder

Found twice on rotten wood. 11385, 11400. July 28, 29. Identified by S. J. Hughes.

Additional collections of moldlike fungi were found to be sterile, or when spores were present it was difficult or impossible to determine the method of their production, so that they were unidentifiable.

On the basis of the material seen, both that listed above and that which proved to be unworkable, it would seem that a considerable

² Now considered to be synonymous with *S. commune*.

number of fungus species is at work reducing the dead organic matter of the Pacific islands to humus and mineral material. In addition to fungi of these types there are also plant pathogens, soil molds, and probably aquatic fungi on land, and marine fungi parasitizing algae and growing on the ocean floor, especially where there is decaying wood. Recent work in the North Atlantic indicates that there is a population of fungi in marine sediments to considerable depth.

According to the unidentifiable material in

Doty's collections, there are several species of polypores, thelephores, and agarics in the mycobiota of Raroia. In addition there are other types of molds associated with wood. In collecting such fungi great care must be exercised in the drying process to insure against the secondary invasion of mold fungi in the tissues and sporiferous areas of the sporophore. It is hoped that additional collections will be made in the Pacific Basin in order that the fungal populations and their activities may become better known.